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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
ALSTRUM ACEVEDO, JAMES HENRY	
ART UNIT	PAPER NUMBER
1616	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/646,362	ZENG, XIAN-MING	
	Examiner	Art Unit	
	JAMES H. ALSTRUM ACEVEDO	1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 March 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 8-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5 and 8-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-5 and 8-15 are pending. Applicant previously cancelled claim 7. Applicant newly cancelled claims 6 and 16. Applicant amended claims 1, 3-5, and 11-15. Receipt and consideration of Applicants amended claim set and remarks/arguments, submitted on March 29, 2009 are acknowledged. All rejections not explicitly maintained in the instant office action have been withdrawn per Applicants' claim amendments.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 27, 2009 has been entered.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 is internally inconsistent, because the minimum amount of the active agent recited as "about 0.265" % w/w does not exclude amounts less than 0.26% w/w, which are excluded by parent claim 1. The term about is not defined in Applicants' claims. Thus, the above interpretation of the amount recited as "about 0.265%" is reasonable and claim 4 is internally inconsistent.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, 5, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Vanderbist et al. (WO 98/50015).

Applicants claim (1) a dry powder composition comprising (a) at least 0.26% w/w of an active ingredient with a particle size of less than 10 microns in diameter and (b) a pharmaceutically acceptable particulate carrier with a particle size of less than 250 microns in diameter (claim 1) or wherein the active is present in an amount less than 10% w/w (claim 2), the carrier is lactose (claim 5); (2) a capsule containing from 1-25 mg of a dry powder composition of claim 1 or 4 (claim 8); (3) a MDPI (i.e. a multidose dry powder inhaler) comprising a reservoir containing the dry powder of claim 1 or 4 (claim 9); and (4) a method for the treatment of chronic obstructive pulmonary (COPD) disease by the step of administering the dry powder of claim 1 or 4 (claim 10).

Vanderbist discloses a dry powder composition comprising **5% w/w of salbutamol and 95% of beta-lactose having a particle size between 100-160 microns** (i.e. an estimated average particle size of 130 microns) and **that salbutamol, also known as albuterol**, is a widely used beta-2 bronchodilator used **in the treatment of COPD** (pg. 17, line 23 through pg. 18, line 4). The albuterol composition was emitted from **a multidose inhaler** in a dosage of 3 mg (i.e. **~ 150 micrograms of albuterol**), that when tested **at a flow rate of 60 L/min yielded a respirable fraction less than 6.8 microns of 31.2 ± 5.7%** (*Id.*).

Vanderbist discloses that the beta-lactose generally has **a particle size between 50 and 250 microns, preferably between 100 and 160 microns** (pg. 5, lines 3-8 and pg. 8, lines 24-26). **The amount of the active ingredient to the beta-lactose that provides satisfactory results ranged from 0.1% w/w to 50% w/w** (pg. 8, line 27 through pg. 9, line 3).

Response to Arguments

Applicant's arguments with respect to claims 1-2, 5, and 9 have been considered but are moot in view of the new ground(s) of rejection.

Claims 1-2, 5, and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Vanderbist et al. (U.S. Patent No. 7,090,870).

Vanderbist discloses a dry powder composition comprising **5% w/w of salbutamol and 95% of beta-lactose having a particle size between 100-160 microns** (i.e. an estimated average particle size of 130 microns) and **that salbutamol, also known as albuterol**, is a widely used beta-2 bronchodilator used **in the treatment of COPD** (col. 8, lines 33-45). The albuterol composition was emitted from **a multidose inhaler** in a dosage of 3 mg (i.e. **~ 150 micrograms of albuterol**), that when tested **at a flow rate of 60 L/min yielded a respirable fraction less than 6.8 microns of 31.2 ± 5.7%** (*Id.*). **The active agent preferably has a particle size between 0.5-6 microns** (col. 4, lines 23-28; claim 5).

Vanderbist discloses that the beta-lactose generally has **a particle size between 50 and 250 microns, preferably between 100 and 160 microns** (pg. 5, lines 3-8 and pg. 8, lines 24-26). **The amount of the active ingredient to the beta-lactose that provides satisfactory results ranged from about 0.1% w/w to about 50% w/w** (col. 3, lines 1-3; col. 4, lines 60-63; claims 1-3; and claim 17).

Response to Arguments

Applicant's arguments with respect to claims 1-2, 5, and 9 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Applicant Claims
2. Determining the scope and contents of the prior art.
3. Ascertaining the differences between the prior art and the claims at issue, and resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-5 and 8-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vanderbist et al. (WO 98/50015).

Applicant Claims

Applicants claim a dry powder composition as described above, wherein (i) the amount of the active is at least 0.26% w/w to about 1% w/w (claim 3) or from about 0.265% w/w to about 0.5% w/w, (ii) the dry powder previously described wherein the excipient has a particle size from about 89 to about 110 microns (claim 11), from about 50 to about 60 microns in diameter (claim 12), or from about 60 to about 90 microns in diameter (claim 13), (iii) a capsule containing from 1-25 mg of a dry powder composition of claim 1 or 4 (claim 8); (iv) a method for the treatment of chronic obstructive pulmonary (COPD) disease by the step of administering the dry powder of claim 1 or 4 (claim 10); and (v) a multidose dry powder inhaler (MDPI) capable of producing a 6 or 12 microgram dose having a fine particle fraction of 48% or 49%-54%, respectively.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

The disclosures of Vanderbist are set froth above.

Ascertainment of the Difference Between Scope the Prior Art and the Claims (MPEP §2141.012)

Vanderbist does not exemplify compositions comprising at least 0.26% w/w to about 1% w/w or about 0.265% w/w to about 0.5% w/w of an active agent comprising

albuterol, compositions comprising particulate carriers with the mean particle size ranges recited in Applicants' claims 12-13, or a method of treating COPD. Although not anticipated, these limitations are necessarily rendered obvious per the prior art teachings.

Finding of Prima Facie Obviousness Rational and Motivation (MPEP §2142-2143)

It would have been obvious to a person of ordinary skill in the art at the time of the instant invention to optimize the amounts of active agent in Vanderbist's compositions, to any value within the range taught by Vanderbist as being satisfactory to obtain a composition suitable for treatment of a particular patient's illness. It is noted that the amount of active agent and the carrier particle sizes taught by Vanderbist overlap with the amounts and mean diameter ranges recited in Applicants' claims. A prima facie case of obviousness necessarily exists when the prior art range overlaps or touches a claimed range, such as in the instant rejection. MPEP § 2144.05. An ordinary skilled artisan would have been motivated to obtain albuterol formulations comprising amounts of albuterol or any other active agent taught by Vanderbist as being suitable and would have had a reasonable expectation of successfully obtaining these compositions, because Vanderbist teaches amounts of active agent ranging from about 0.1% w/w to about 50% w/w as being satisfactory. Similarly, an ordinary skilled artisan would have been motivated and would have had a reasonable expectation of successfully obtaining carrier particles having mean particle sizes between 50-250 microns, because Vanderbist teaches these particle sizes as being suitable.

Regarding the claimed method of treating COPD, an ordinary skilled artisan would have been motivated to administer Vanderbist's exemplified albuterol formulation to treat COPD, because albuterol is a well-known drug indicated for the treatment of COPD. Thus, an ordinary skilled artisan would have had a reasonable expectation of successfully treating COPD by the administration of Vanderbist's invented inhalable albuterol/lactose dry powder formulation. Regarding the recitation of a MDPI capable of administering a dose of 6 or 12 micrograms, it is the Examiner's position that the MDPI explicitly identified by Vanderbist has the capability of administering said doses, absent evidence to the contrary. Similarly, it is the Examiner's position that the MDPI utilized by Vanderbist is capable of administering said doses at a fine particle fraction (FPF) of 48%-54%. It is noted that FPF can be affected by various conditions such as flow rate. It is reasonable that upon selection of an optimized flow rate an ordinary skilled artisan could obtain a FPF of 48%-54%, because the compositions taught by Vanderbist are the same or substantially similar to those claimed by Applicants and Applicants' claimed MDPI does not recite any features that would be expected to affect the observed FPF. Regarding the allegation of superior/surprising results in Applicants' specification, Applicants' general statements in paragraph [0008] are not persuasive as to the alleged superior properties of the claimed composition, but merely represent unsubstantiated allegations of superiority. Applicants' data is noted. However, Applicants' data is not commensurate in scope with the claims, because it is limited to compositions comprising 0.26-0.27% w/w of formoterol fumarate dihydrate and lactose monohydrate having a VMD or MMD of 70-120 microns. Furthermore, Applicants' data is not a

proper side-by-side comparison that can be relied upon to conclude that Applicants' compositions possess properties absent from the prior art compositions. Therefore, the claimed invention, as a whole, would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, because the combined teachings of the prior art is fairly suggestive of the claimed invention.

Response to Arguments

Applicant's arguments with respect to claims 1-5, and 8-15 have been considered but are moot in view of the new ground(s) of rejection.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

The provisional rejection of claims 1, 4-6, and 9 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 11 of copending Application No. 10/646,361 (copending '361) in view of Haeberlin (WO 01/39745) **is maintained** for the reasons of record and because Applicants did not traverse the instant rejection with any substantive arguments.

Conclusion

Claims 1-6 and 8-16 are rejected. No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James H. Alstrum-Acevedo whose telephone number is (571) 272-5548. The examiner is on a flexible schedule, but can normally be reached on M-F ~10am~5:30 pm, and Saturdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on (571) 272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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